

FIG. 1

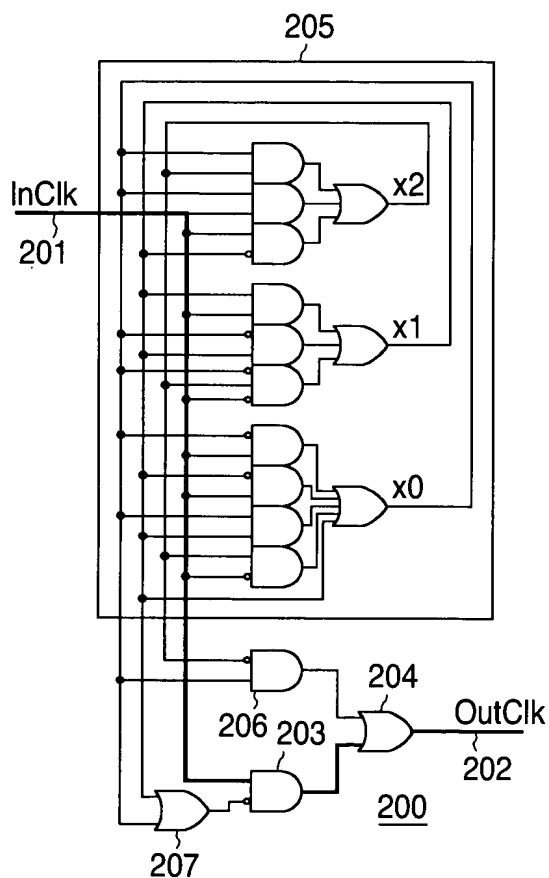
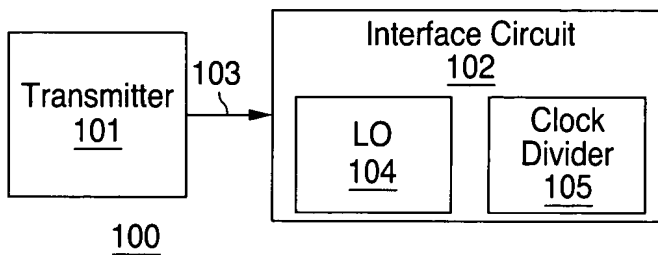
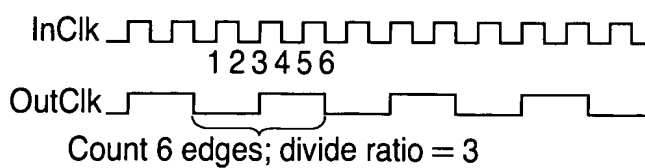


FIG. 2

FIG. 3



$x_{n-1}, \dots, x_2, x_1, x_0$	C	0	1
Gray code 0			
Gray code 1			
Gray code 2			
Gray code 3			
...			
Gray code r			
Gray code r+1			
...			
Gray code 2^{n-r-2}			
Gray code 2^{n-r-1}			
...			
Gray code 2^{n-3}			
Gray code 2^{n-2}			
Gray code 2^{n-1}			

FIG. 4A

$x_{n-1}, \dots, x_2, x_1, x_0$	C	0	1
Gray code 0		Gray code 0	Gray code 1
Gray code 1		Gray code 2	Gray code 1
Gray code 2		Gray code 2	Gray code 3
Gray code 3		Gray code 4	Gray code 3
...	
Gray code r		Gray code r	Gray code 2^{n-r-1}
Gray code r+1		X	X
...	
Gray code 2^{n-r-2}		X	X
Gray code 2^{n-r-1}		Gray code 2^{n-r}	Gray code 2^{n-r-1}
...	
Gray code 2^{n-3}		Gray code 2^{n-2}	Gray code 2^{n-3}
Gray code 2^{n-2}		Gray code 2^{n-2}	Gray code 2^{n-1}
Gray code 2^{n-1}		Gray code 0	Gray code 2^{n-1}

FIG. 4B

$x_{n-1}, \dots, x_2, x_1, x_0$		C	
		0	1
Gray code 0		Gray code 0	Gray code 1
Gray code 1		Gray code 2	Gray code 1
Gray code 2		Gray code 2	Gray code 3
Gray code 3		Gray code 4	Gray code 3
...	
Gray code r		Gray code r	Gray code 2^{n-r-1}
Gray code r+1		X	X
...	
Gray code 2^{n-r-2}		X	X
Gray code 2^{n-r-1}		Gray code 2^{n-r}	Gray code 2^{n-r-1}
...	
Gray code 2^{n-3}		Gray code 2^{n-2}	Gray code 2^{n-3}
Gray code 2^{n-2}		Gray code 2^{n-2}	Gray code 2^{n-1}
Gray code 2^{n-1}		Gray code 0	Gray code 2^{n-1}

FIG. 4C

$x_{n-1}, \dots, x_2, x_1, x_0$		S, C			
		00	01	11	10
Gray code 0		0	0	X	1
Gray code 1		0	0	1	1
Gray code 2		0	0	1	1
Gray code 3		0	0	1	1
...	
Gray code r		0	0	1	1
Gray code r+1		X	0	X	1
...	
Gray code 2^{n-r-2}		0	0	1	1
Gray code 2^{n-r-1}		0	0	1	1
...	
Gray code 2^{n-3}		0	0	1	1
Gray code 2^{n-2}		0	0	1	1
Gray code 2^{n-1}		1	X	1	1

FIG. 4D

$x_{n-1}, \dots, x_2, x_1, x_0$	S, C		
	00	01	11
Gray code 0	Gray code 0	Gray code 1	X
Gray code 1	Gray code 2	Gray code 1	Gray code 0
Gray code 2	Gray code 2	Gray code 3	Gray code 1
Gray code 3	Gray code 4	Gray code 3	Gray code 2
...
Gray code r	Gray code r	Gray code r+1	Gray code r-1
Gray code r+1	X	Gray code $2^n - r - 2$	X
...
Gray code $2^n - r - 2$	Gray code $2^n - r - 1$	Gray code $2^n - r - 2$	Gray code r+1
Gray code $2^n - r - 1$	Gray code $2^n - r - 1$	Gray code $2^n - r$	Gray code $2^n - r - 1$
...
Gray code $2^n - 3$	Gray code $2^n - 3$	Gray code $2^n - 2$	Gray code $2^n - 3$
Gray code $2^n - 2$	Gray code $2^n - 1$	Gray code $2^n - 2$	Gray code $2^n - 3$
Gray code $2^n - 1$	Gray code $2^n - 1$	X	Gray code $2^n - 2$
			Gray code $2^n - 1$

FIG. 4E

x2, x1, x0	C	
	0	1
000	000	001
001	011	001
011	011	111
010	X	X
110	X	X
111	101	111
101	101	100
100	000	100

FIG. 5A

x2, x1, x0	C	
	0	1
000	0	0
001	0	0
011	0	1
010	X	X
110	X	X
111	1	1
101	1	1
100	0	1

x2

FIG. 5B

x2, x1, x0	C	
	0	1
000	0	0
001	1	0
011	1	1
010	X	X
110	X	X
111	0	1
101	0	0
100	0	0

x1

FIG. 5C

x2, x1, x0	C	
	0	1
000	0	1
001	1	1
011	1	1
010	X	X
110	X	X
111	1	1
101	1	0
100	0	0

x0

FIG. 5D

x2, x1, x0 \ C		0	1
		0	1
000		0	0
001		0	0
011		0	1
010		X	X
110		X	X
111		1	1
101		1	1
100		0	1

OutClk

FIG. 5E

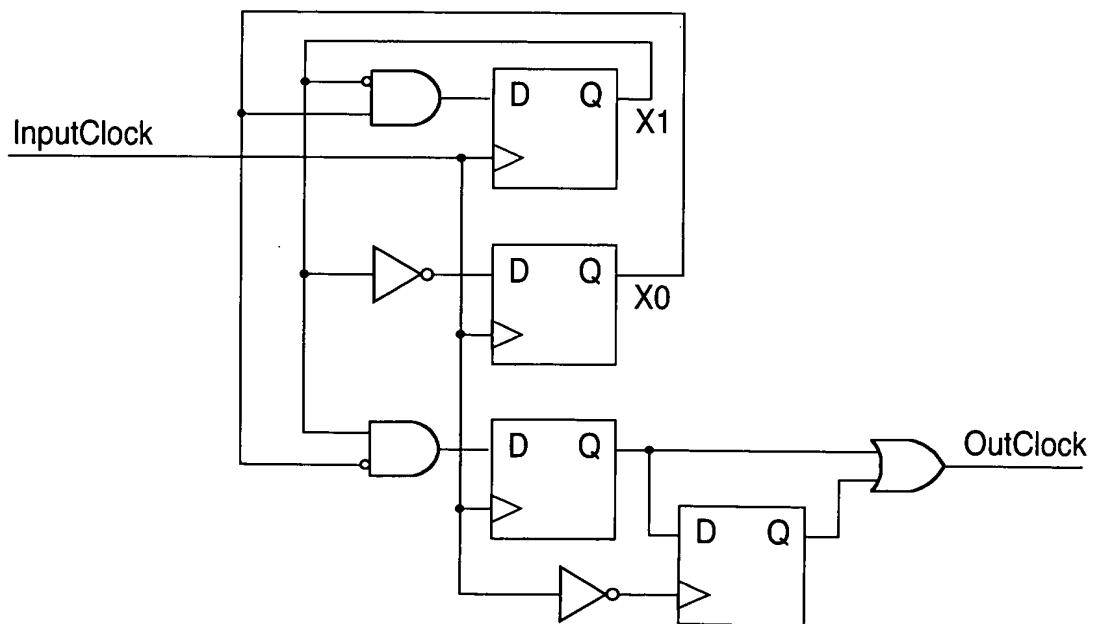


FIG. 6